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ABSTRACT

The papers in this compilation focus on cataloging, classification, and indexing: (1) "Bibliographic Relationships in Library Catalogs" (Barbara B. Tillett, United States); (2) "Bibliographic Description: Past, Present, and Future" (Michael Gorman, United States); (3) "The Dewey Decimal Classification Enters the Computer Era: Developing the DDC Database and Editorial Support System" (John J. Finni and Peter J. Paulson, United States); (4) "The Usage of Classification Systems in National Bibliographies" (Barbara Kelm and Walther Traiser, West Germany); and (5) "Classification Numbers in Soviet Publications: Review of Classification Systems and Regulations of Class Numbers Publication in Soviet Books and Periodicals" (E. Sukiasian, USSR). (CGD)

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# DIVISION OF BIBLIOGRAPHIC CONTROL

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## SECTION ON CATALOGUING

*Session: 137 Wednesday 08.30 – 10.00*

Bibliographic relationships in library catalogues *(79-CAT-1-E)*

Barbara B Tillett
University of California San Diego
La Jolla CAL USA

Bibliographic description: past, present and future *(130-CAT-2-E)*

Michael Gorman
University of Illinois at Urbana-Champaign USA

## SECTION ON CLASSIFICATION AND INDEXING

*Session: 150 Wednesday 10.30 – 12.00*

The Dewey Decimal Classification enters the computer era: developing the DDC database and editorial support system *(37-CLAS-1-E)*

John J Finni
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Forest Press
Albany New York USA

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79-CAT-1-E

# BIBLIOGRAPHIC RELATIONSHIPS IN LIBRARY CATALOGS

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**ABSTRACT**

*This paper reviews the results of doctoral research on bibliographic relationships, which are defined as associations between two bibliographic items or works. A taxonomy of bibliographic relationships is presented, which includes equivalence relationships, derivative relationships, descriptive relationships, whole-part relationships, accompanying relationships, sequential relationships, and shared characteristic relationships. A brief review of linking devices indicates the Anglo-American Cataloguing rules have been inconsistent in the treatment of bibliographic relationships. A more consistent treatment would be the presentation of a citation for the related item with an indication of the specific type of bibliographic relationship, expanding upon the UNIMARC linking fields concept.*

I began my studies in the doctoral program at the University of California, Los Angeles with the desire to design the perfect computer structure for bibliographic information. However, my advisors quickly pointed out that before designing a system, one should have a clear understanding of the conceptual structure or theoretical basis of the system. Therefore, my research was limited to one factor in understanding the conceptual structure of the ideal library catalog, namely bibliographic relationships.

The conceptual structure of a catalog is the framework that describes what should be included in the catalog, the necessary elements to describe those things, as well as links that should be made among them. One currently popular conceptual model is the entity-relationship model,[1] a structure which includes entities, attributes, and relationships. One possible interpretation of this entity-relationship model applied to the library catalog is to view bibliographic records and authority control records as entities, data elements within records as attributes, and links between the records and between records and data elements as relationships. In such a model, relationships could beviewed as four types: bibliographic relationships, name relaationships, subject relationships, and access point relationships. Cataloguing rules have covered bibliographic relationships and name relationships, and Cutter's rules even covered relationships among subject terms. I specifically limited my study to bibliographic relationships, which can be defined as associations between two bibliographic items or works.

In the course of my research, I examined 24 sets of Anglo-American cataloguing codes from Panizzi's famous 91 rules published in 1841 through the current AACR2 *(Anglo-American Cataloguingrules,* 2nd ed.), published in 1978, to document both changes in the pertinent rules associating bibliographic items or works and the evolution of various linking devices. The review of cataloging codes led to the creation of a taxonomy of these bibliographic relationships. The various types of relationships were then examined in the 1968-July 1986 MARC files of the Library of Congress to determine the frequency of occurrence of each type of relationship with respect to five factors: bibliographic format, subject, publication date, language, and country of publication. I was interested in whether the relationship types could be predicted from knowledge of these five factors. (The findings from the study of the MARC files of the Library of Congress will be mentioned in the oral presentation.)

Bibliographic relationships have been recognized as important features of the catalog by catalog codemakers and the makers of machine-readable bibliographic formats. In the design of the UNIMARC format, in particular, three categories of bibliographic relationships have been defined:

vertical: "the hierarchical relationship of the whole to its parts, and the parts to a whole, e.g., downward link: a serial to its subseries or to individual volumes of the series; upward link: the individual volume to its subseries and/or series,"

horizontal: "the relationship between versions of an item in different languages, formats, media, etc."

chronological: "the relationship in time between issues of an item, e.g., the relation of a serial to its predecessors and successors."[2]

These three categories are very general and try to encompass all types of relationships, but they do not really succeed. For example, they omit the relationship between a commentary and the item upon which it comments. Another problem is the fact that the three categories are not mutually exclusive, that is, a given type of relationship could fall into two categories. The sequential editions of a work, for instance, would be both horizontal and chronological. But the UNIMARC definitions are a major step in both identifying categories of relationships and using those categories in linking fields, the 4XX fields, within the machine-readable format for bibliographic records.

The vertical or hierarchical relationship as defined by UNIMARC, was the topic for the INTERMARC Software-Subgroup Seminar of 1981. One paper from that seminar by Goossens and Mazur-Rzesos entitle, "Hierarchical Relationships,"[3] introduced a schematic representation for such relationships. Their intent was to provide the theoretical basis for manual and computerized solutions to the problem of expressing such relationships in the catalog. Their notation included three levels of tree structures, and their examples ranged from very simple to very complex relationships. Unfortuatley, they included relationships that were not really hierarchical (in the sense of one item being "a part of" another), as prescribed in the UNIMARC definition. In more specific terms, Goossens and Mazur-Rzesos also included such things as supplements and accompanying materials, which are not really a part of the item they augment.

Of equal interest is the view of bibliographic relationships offered in McCallum's "MARC Record-Linking Technique."[4] Her categorization of bibliographic items suggests a dichotomous classification of relationships into relationships among items in containers and relationships among separately contained items. In fact, the

taxonomy I have developed could be viewed as an expansion of McCallum's division and an expansion and clarification of the UNIMARC categorizations. The seven general categories of the taxonomy I developed are:

- Equivalence relationships – those which hold between exact copies of the same manifestation of a work or between an original item and reproductions of it, as long as the intellectual content and authorship are preserved. Examples are relationships between exact copies or relationships between an original and a facsimile reprint or microfilm version of textual information, etc.
- Derivative relationships – those which hold between a bibliographic item and a modification based on that item. Such relationships were called horizontal in UNIMARC, and include editions, translations, dramatizations, parodies, etc.
- Descriptive relationships – those which hold between one bibliographic item and a description, criticism, to review of that item, such as between a work and its commentary or critique.
- Whole-Part relationships – those which hold between a component part of a bibliographic item or work and its whole, such as between a short story and an anthology in which it is contained or between a part of a series and the whole series. Such relationships correspond to the UNIMARC definition of vertical relationships.
- Accompanying relationships – those which hold between a bibliographic item and an item it accompanies such that the two items augment each other equally or one item augments another principal or predominant item. Bibliographic items in this category are usually predominant and subordinate, auch as an item and its supplement, concordance, or index. But also included are equal parts which augment each other, such as the parts of a kit.
- Sequential relationships – those which hold between bibliographic items that continue or precede one another, but are not considered derivative. Such a relationship is similar to the UNIMARC chronological relationship. Examples of items bearing a sequential relationship are sequels of a book, or the parts of a series or serial that has changed title, etc.
- Shared characteristic relationships – those which hold between one bibliographic item and another bibliographic item that is not otherwise related but coincidentally has a common author, title, subject, or other characteristic used as an access point to the record for that item in a catalog. For example, a shared characteristic in this sense is shared language, country of publication, or publication date.

These categories were derived after a review of Anglo-American cataloging codes. The historical review of rules uncovered inconsistent treatment of bibliographic relationships as reflected through various linking devices. Linking devices for bibliographic records are mechanisms used in a library catalog to indicate a relationship between two bibliographic items or between a bibliographic item and an abstract work. The evolution of linking devices seemed to correspond to the type of catalog available at the time the cataloguing rules were written. In other words, the technology used to create the catalog influenced the type of link made in the catalog. The linking devices can be categorized into those within the bibliographic record: edition statements, series statements, notes, uniform titles or filing titles, multilevel descriptions, dash entries, and additions to the physical description; and those between bibliographic records: references, analytical entries, added entries, and explanatory references. Some devices have come and gone, such as the dash entry, and other devices were created and changed over time, such as the added entry and reference. You are all familiar with cross references, such as to "see" or "see also"; added entries are records in a catalog to provide additional access beyond the primary record, also known as the main entry.

In the 1841 rules of the British Museum, known as "Panizzi's 91 rules," the only kinds of records in the catalog were entries and references. Panizzi had three kinds of references: 1) name to name, 2) name to work, and 3) work to work. Bibliographic records were essentially entered only once and access to those records was provided through references. Two forms of catalog were popular at that time: the book catalog and the handwritten card catalog. The single full entry with brief references to it was the most economical structure for the catalog.

At the turn of the twentieth century, the Library of Congress began selling its printed catalog cards, spreading this new technology. The cataloguing rules responded with a new device, called the added entry, which could be made by typing an added heading at the top of the pre-printed main card to be filed wherever appropriate in the card catalog for additional access. However, it took many years for the makers of the rules to sort out when to use an added entry and when to use a reference. In the codes from 1902 through 1908 there were nearly as many rules precribing a cross reference as an added entry for the same type of link. It took quite some time to delineate the use of an added entry for access points and the use of references for linking name variations. Even in todays's rules, the delineation is not complete. For example, there are rules suggesting the creation of a reference *or* an added entry to reduce the number of cards used to link various editions of a work (AACR2 rules 26.5. and 21.29).

As for which devices were used for which type of relationship:

- equivalence relationships were indicated through the use of dash entries, notes, and uniform titles; typically the same bibliographic record was used for all copies, but not always,
- derivative relationships have been expressed in catalog records through nearly every device with no consistent rationale or preference for any particular device. Edition statements, notes, uniform titles, cross references, subject headings, common main entries, filing titles, and added entries have been used,
- descriptive relationships have been indicated through common main entry headings, notes about the describing item, analytical entries, added entries, or subject entries for the original work,
- whole-part relationships have been shown by contents notes, analytical entries, added entries, multilevel descriptions, dash entries, uniform titles, and explanatory references,
- accompanying relationships have been expressed through additions to the physical description, notes (including an annotation on the same bibliographic record as the principal work which it augments), dash entries, multilevel descriptions, or separate records with linking notes,
- sequential relationships have been indicated by notes ofd earlier or later titles, assembling added entries, or uniform (or unique) titles,
- shared characteristic relationships result from retrieval or identification of records that coincidentally share some access point but otherwise are not related in any of the other types of relationships. Such relationships were not included in the study of cataloguing codes.

As an alternative to the inconsistent treatment of bibliographic relationships, I would propose a consistent treatment using a citation of the related item or work with an indication of the type of relationship. In the machine-readable record, coding could be used for the indication of the type of relationship and the variable field used for the text of the citation. For libraries relying on card or book catalogs, the same machine-readable record could generate page displays or cards with headings that would provide the desired collocation of related materials. By clearly identifying the type of relationship and giving a citation for the related item or work, we could arrange displays in computerized catalogs to show items and indicate how they are related, thereby providing paths with clear road signs for the catalog users. UNIMARC has made a start in the right direction, but there is more work to be done.

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[4]McCallum, Sally H. "MARC Recording-Linking Technique," *Information Technology ad Libraries*, v. 1, no. 3 (Sept. 1982), p. 281-291.

**FIGURES**

The following figures will be discussed during the oral presentation.

Figure 1: Library of congress MARC Database
Figure 2: Distribution of MARC Formats over Relationship Records
Figure 3: Distribution of Relationship Type by Format
Figure 4: Distribution of Relationship Type by Subject
Figure 5: Distribution of Formats by Subject over Relationship Records Figure 6: Distribution of Relationship Type by Publication Date
Figure 7. Distribution of Relationship Type by Language
Figure 8: Distribution of Relationship Type by Country of Publication

Figure 1.

# Library of Congress MARC Database

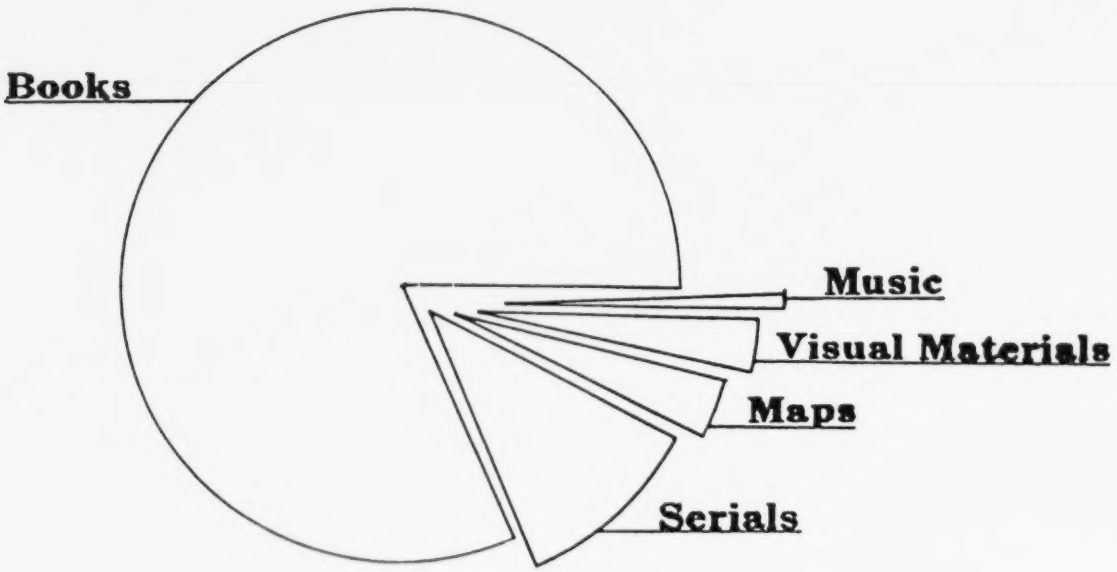



Figure 2

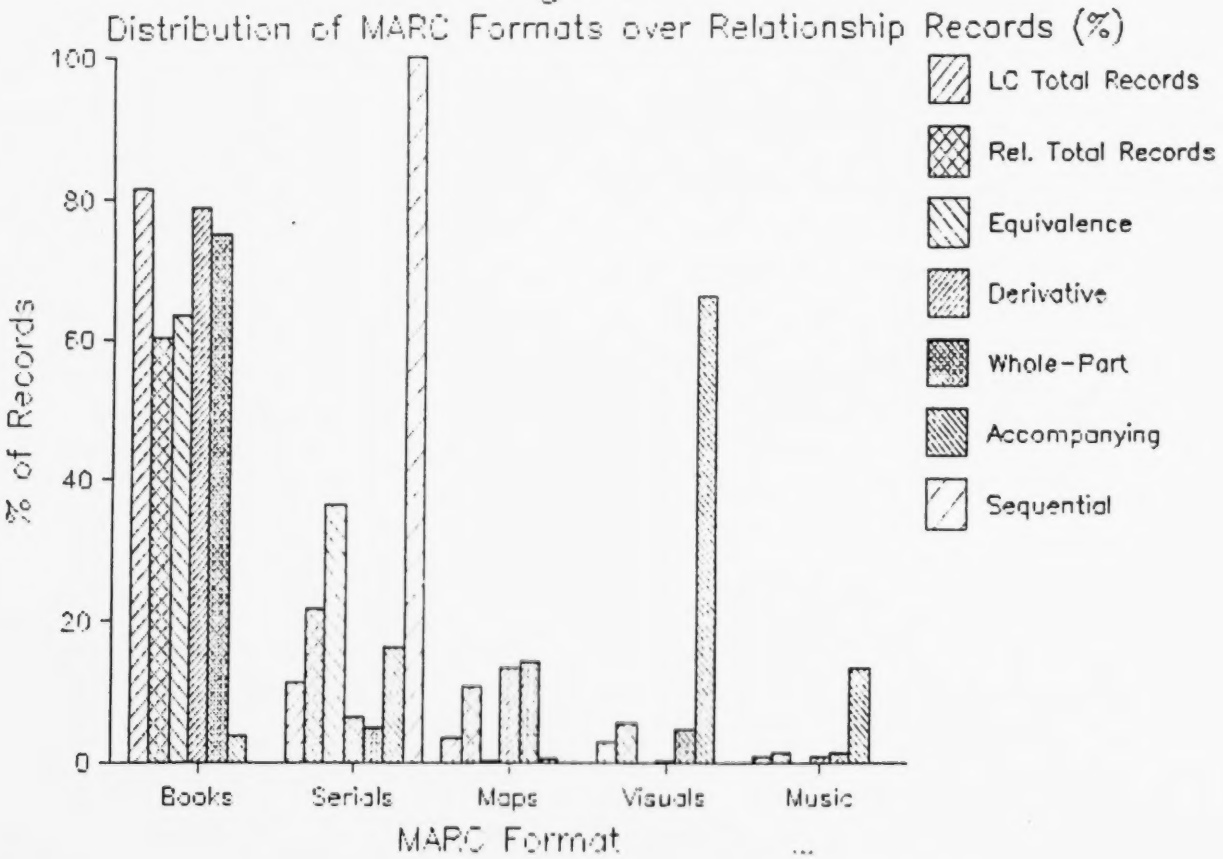


Figure 3

Distribution of Relationship Type by Format

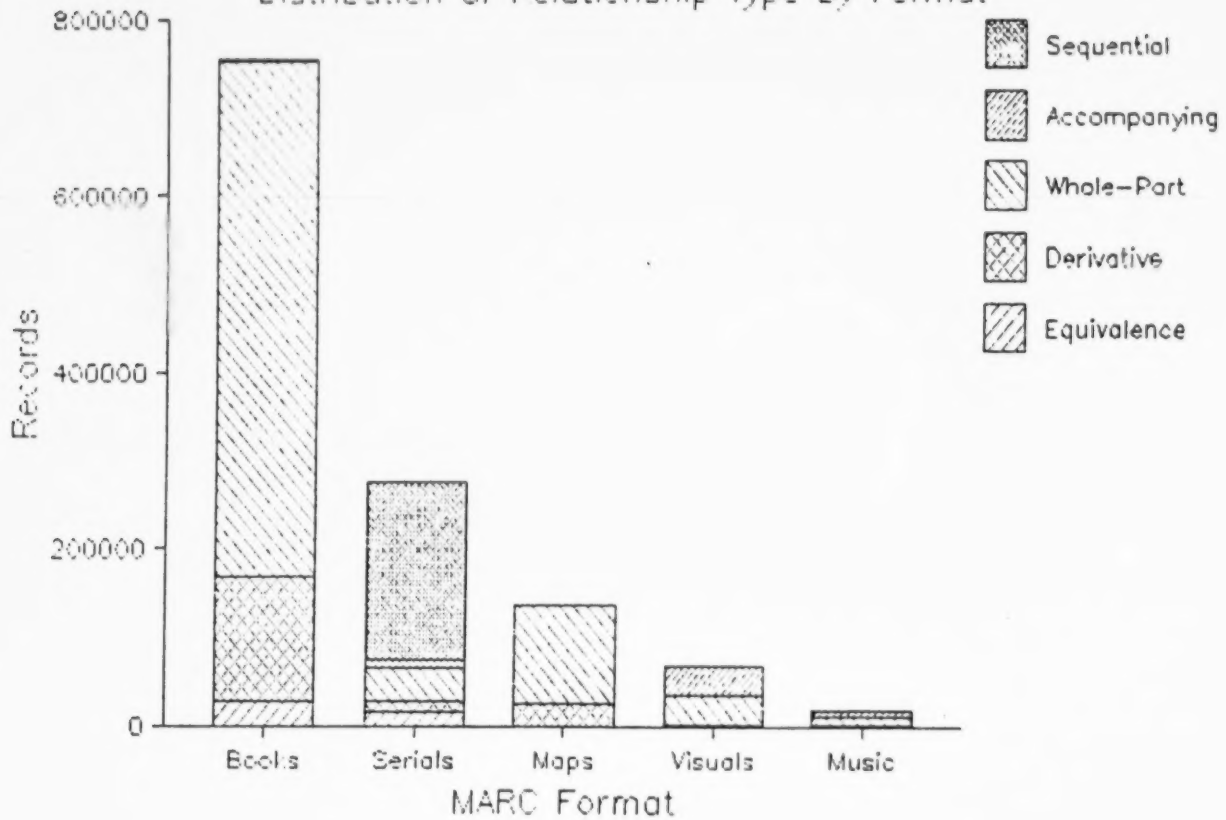



Figure 4

Distribution of Relationship Type by Subject

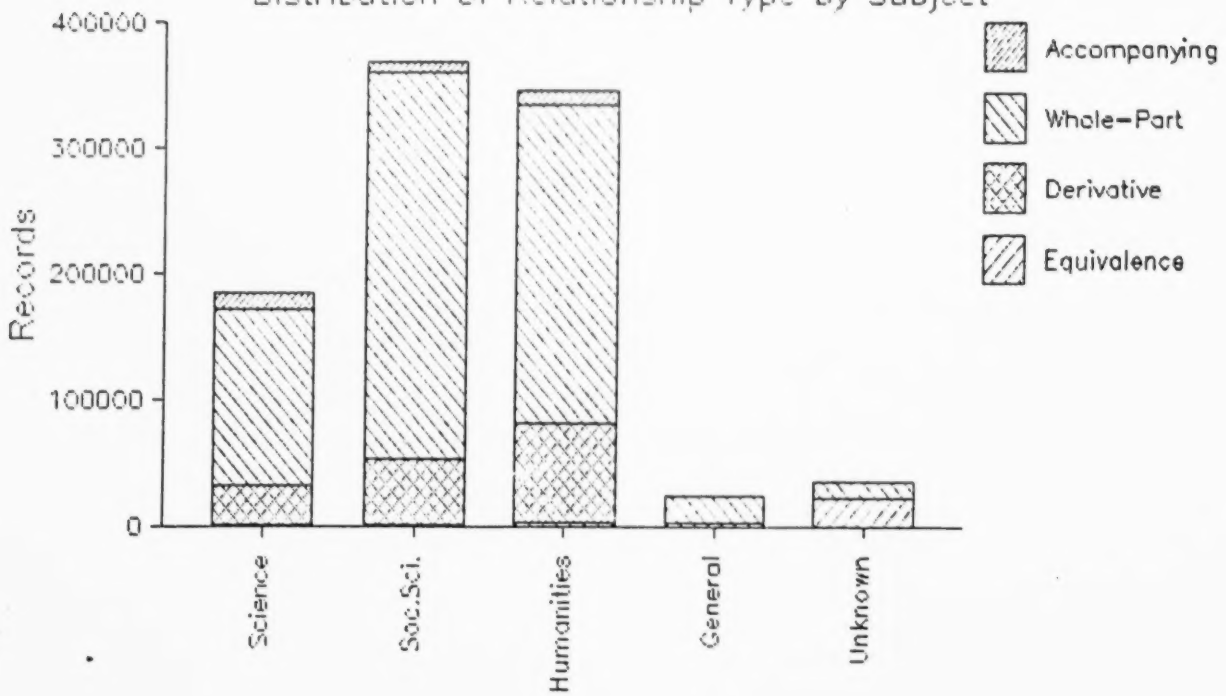


Figure 5

Distribution of Formats by Subject over Relationship Records

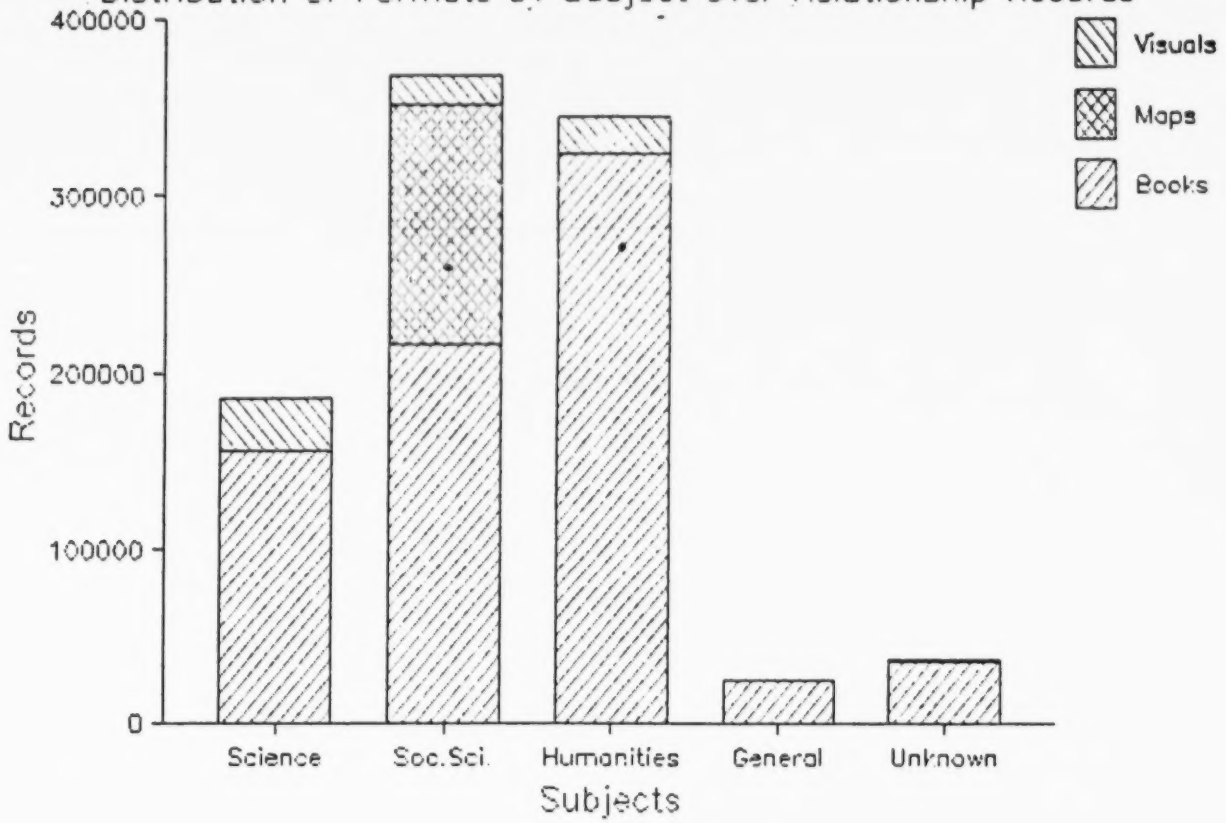



Figure 6

Distribution of Relationship Type by Publication Date

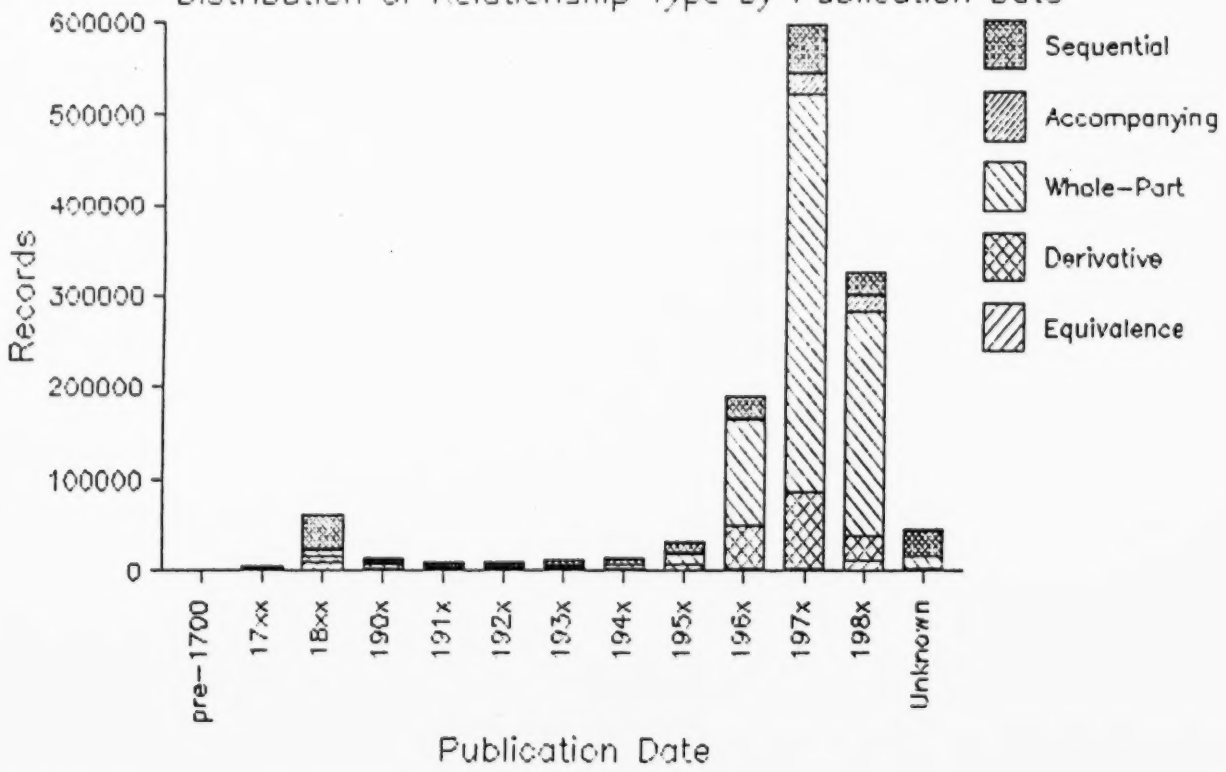


Figure 7.

Distribution of Relationship Type by Language

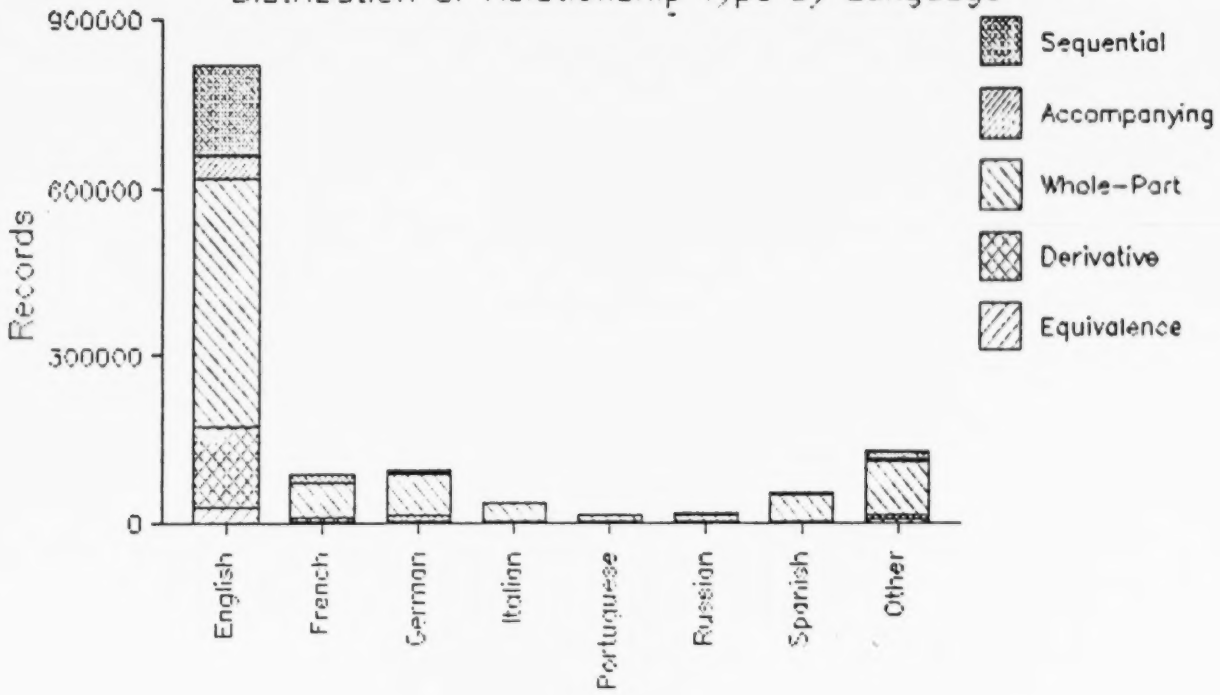
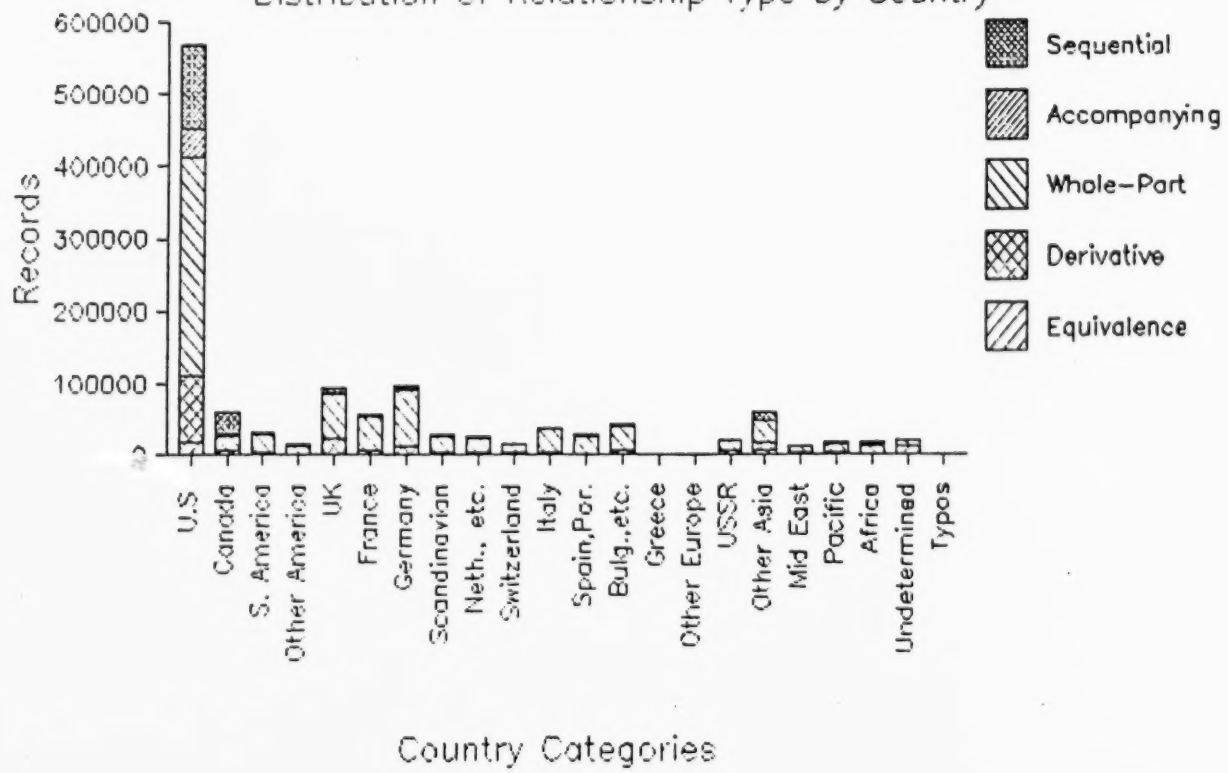



Figure 8

Distribution of Relationship Type by Country



# BIBLIOGRAPHIC DESCRIPTION : PAST, PRESENT, & FUTURE

Michael Gorman, *Acting University Librarian, University of Illinois at Urbana-Champaign, USA*

For the purposes of this paper, bibliographic description means the recording of details from and about physical carriers of knowledge and information which are collected by libraries. It is concerned with such data as the title, edition, publisher, and series; it excludes all data related to the work of which the carrier is a manifestation that are used to provide access to the bibliographic description (such as author, uniform title, and subject headings).

The pivotal standard in the field of bibliographic description. the International Standard Bibliographic Description (ISBD), was created to answer several needs. In the late 1960s and early 1970s there were perceived or actual needs for a format for the bulk of the catalogue entry which would render that entry automatically transferable into machine-readable form; for a uniformity in bibliographic description which would assist international bibliography; for a framework which would be the basis for national cataloguing codes (many of which were under revision or being newly created at the time); and for a parallel in the human-readable area of the systematization which was evolving for machine-readable bibliographic records, notably, but not exclusively, in the MARC formats. In order to answer these needs, the IFLA Committee on Cataloguing (and later its UBC Office) pursued an initiative which was began at the International Meeting of Cataloguing Experts which was held in Kobenhavn (Copenhagen) in 1969. The resulting work of an international committee over the next five years produced the first of the ISBDs – that for printed monographic publications. This was the beginning of a process which continues to this day and which has been of great (though not unmixed) benefit to the international library community. Other ISBDs have followed and the first set of ISBDs has just undergone a revision process.

What have the ISBDs wrought and what are their values and drawbacks? The purpose of this paper is to answer that question and to make some comments on the possible future of bibliographic description. Let me begin with the achievements of the ISBD programme. The first is manifest to anyone who uses national level cataloguing of any kind. In national bibliographies from all over the world one can see ISBD-based cataloguing. This includes bibliographies of roman alphabet languages, non roman alphabet languages, and of analphabetic languages. In addition to the effect non national bibliographies, one can also see the influence of ISBD on centralized cataloguing of all kinds. From the largest of all centralized cataloguing services – those of the U.S. and U.S.S.R – to those of small countries and of commercial and other private suppliers of cataloguing data, the influence of the ISBD is pervasive. In a relatively short time, the ISBD has become a kind of bibliographic *lingua franca*, its punctuation and other conventions recognizable throughout the world. A second achievement of the ISBD programme lies in the fact that it has covered all kinds of library materials. Though, as I shall point out later in this paper, I believe that the fragmentation of the ISBD programme is a serious drawback, one cannot but applaud the attempt to deal with the world of libraries as they are. That world is complex, multi-faceted, and based on carriers of knowledge and information of all kinds. Practices of the past which segregated materials in different formats (notably in medium-specific catalogues) are clearly inappropriate in such a library environment. In providing a framework that accomodates all present (and *future*) types of library materials, the ISBD has been instrumental in making all-media catalogues and all-media computer-readable formats possible. The third important achievement of the ISBD programme can be seen in its interrelationship with machine-readable communication formats. The ISBD, of course, has much in common with such formats. They share a systematic delineation of their elements (punctuation in one case, tagging and coding in the other), a medium-neutral approach to the conveying of cataloguing information (in that the framework of each is hospitable to all bibliographic information), and a language-neutral (hence internationalist) approach to bibliographic information. In a way, the communication formats (the means of sharing bibliographic data) and the ISBD (the means of displaying that data in a standardized and internationally comprehensible form) are as inseparable as the two pages on a leaf. They, together with standardized access points (name, title, and subject), are the essentials of the envolving system of Universal Bibliographic Control.

The fourth, and possibily most important, achievement of the ISBD programme is its determined internationalism. The committees which have worked on the various drafts of the various ISBDs were chosen for their representativeness. Those drafts were circulaated throughout the world and made available to the widest possible library community. The concerns of many cultures, language groups, and bibliographic traditions were heard and the resulting compromises embodied in the final versions of the ISBDs. Such an effort is not only praiseworthy but also indicative of the results which can be achieved if great efforts are made. It is significant that the ISBD – the bibliographic standard for which the most international effort was expended – is also the most internationally used standard in bibliographic history.

The picture is not entirely unclouded. The main drawbacks (for failures is too strong a word) of the ISBD programme lie in its history and in a misapprehension of its history and original purpose. The historical misfortune of the ISBD programme was that, in violation of every canon of the organization of knowledge, it proceeded from the special to the general. Five years elapsed between the decision (at the ICME at Copenhagen in 1969) to create what was then called the Standard Bibliographical Description (SBD) and the publication of the "First standard edition" of the ISBD(M). The "M" in that title stands for "monographic," by which is meant that that first formal manifestation of the ISBD dealt with printed books, and not with serials of any kind or with non-printed-word materials such as sound recordings, maps, and microforms. This flawed first step was a result of the origin of the idea of the ISBD. That origin lay in a document that I wrote for Unesco in 1968 which surveyed the descriptive cataloguing practices of a number of national bibliographies throughout the world. Those bibliographies were exclusively or overwhelmingly concerned with the listing of printed books. *Ab initio*, then, the concept of the ISBD envolved from the long and structured history of the description of printed books. Since that long history had resulted in a surprising degree of uniformity of practice in countries with otherwise different bibliographic traditions, it was natural that that uniformity would appeal as the basis for the proposed international system of description for *all materials*. At no time during the contruction of the ISBD(M) was consideration given to the formulation of a framework which would, from the beginning, take into account the needs of library materials other than printed books in the Western printing, publishing, and cataloguing traditions. As a result the ISBD programme became an exercise in the modification of the printed books framework to accomodate the needs of other kinds of materials and, in some instances, to force the description of those other materials into the Procrustean bed of the ISBD(M).

The problems inherent in the limitation described above only became apparent, even to those who had been involved from the beginning (including myself), when work began on the revision of the *Anglo-American cataloguing rules* in the mid-1970s. The analysis that preceded that revision highlighted the need for a generalized structure for the description of all library materials (including new materials such as computer files and materials as yet unthought of). It was evident that the ISBD(M) could not supply such a generalized framework. The Joint Steering Committee for the Revision of AACR (JSC) cooperated with the IFLA Committee on Cataloguing and UBC Office in the creation and promulgation of the ISBD(G) – the "G" standing for "General." Only on the publication of that document (in 1977), can the true ideal of a medium-neutral framework for bibliographic description be said to have been achieved. Unfortunately, by that time work was completed or well in hand on ISBDs for serials, "non-book" materials, cartographic materials, and other materials. That the ISBD(G) came later rather than first in the ISBD programme was, and continues to be, a major flaw in that programme.

In the absence of the ISBD(G), work on the other ISBDs had, perforce, either to be based on the ISBD(M) or to consider new variations to accomodate the perceived or actual needs of the material under consideration. This dilemma has, on occasion, resulted in less than happy results. The best (or worst) example of such results can be found in the ISBD for serials – ISBD(S). Unfortunately for the ISBD(S), another proposed international standard was being created at more or less the same time. That proposed standard – the *Guidelines* for the International Serials Data System – overlapped to some extent with the ISBD(S). Some of that overlapping was, however, delusory in that the ISDS *Guidelines* contained formalized access points ("key-titles") and eschewed a fundamental canon of bibliographic description – that the description should be derived from data on or about the physical object in hand. This conjunction, and the absence of a generalized framework, resulted in an ISBD which contains significant differences from the other ISBDs. In my view, this is an important matter both conceptually and practically.

The ISBD(G) has another attribute which differentiates it from the other ISBDs. In that difference can be seen the way in which the ISBD programme has diverged from a fundamental original objective of the ISBD. The ISBD(G) confines itself to setting out the areas and elements of the description, the prescribed punctuation which is used

to delineate those areas and elements, and a minimum of descriptive matter defining the content of the areas and elements. Thus it is genuinely a framework for bibliographic description and not a code of cataloguing from which a cataloguer can create bibliographic descriptions. the ISBD was never intended to be a replacement for national cataloguing codes, but to be a structure within which those codes could be developed. However, many of the individual ISBDs contain for more detail than is necessary for the explication of a framework and, in some instances, are far more detailed than the national cataloguing codes which are supposedly derived from them.

At present, a "Five-year review" of some ISBDs has been completed, work on a new ISBD for computer files is in a late stage, and the ISBD is almost universally accepted as the standard upon which revision of existing cataloguing codes and creation of new ones should be based. It would appear that the future of the ISBD will be merely a continuation of its present. It is indeed true that no major revision of the ISBDs is needed or desired. It is also true that the process of creating and revising catalguing rules and creating and revising machine-readable communication formats are continuing and will continue indefinitely. These processes are intertwined with the future of the ISBD programme. As new carriers of information are developed, there will be a need for ISBDs, for cataloguing rules, and for machine formats. It would be pleasant if all three could be developed in concert. In reality, of course, such activities are never synchronized. The ISBD, which would, ideally, be the first step, has in the past and present lagged behind the other related standards. If the present ISBDs were to be reduced to frameworks that both conformed to the ISBD(G) and contained only enough information to act as a framework, and if future ISBDS conformed to that ideal, the ISBD programme would resume the position of centrality and leadership in bibliographic description for which it was destined originally.

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*37-CLAS-1-E*

# THE DEWEY DECIMAL CLASSIFICATION ENTERS THE COMPUTER ERA: DEVELOPING THE DDC DATABASE AND EDITORIAL SUPPORT SYSTEM

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and
Peter J. Paulson, *Forest Press, Albany, New York, USA*

**ABSTRACT**

*In 1984, Forest Press commissioned INFORONICS to develop an online system to support editing the Dewey Decimal Classification* and the *Manual* for its use. The "Editorial Support System (ESS)" has had far-reaching impact on the use of classifiaction in online catalogs, both in general and for DDC in particular. All references to the same Dewey number appear in a single unit record. Contextual searching with the possibility of truncation takes advantage of the hierarchical nature of Dewey numbers. The authors see four major applications for ESS: 1. editing DDC; 2. a tool for classifiers; 3. structure and vocabulary enhancement for subject searching in online catalogs; 4. structure and organization of knowledge in knowledge-based and Artificial Intelligence systems. Forest Press, however, will continue to provide a printed version of DDC for libraries without computer services.

In 1984, INFORONICS received from Forest Press a commission to develop an online system to support the editorial process which would lead to the publication of the three volumes of the *Dewey Decimal Classification* (DDC) and the Manual on the Useof the Dewey Decimal Classification. We were unaware at the time that we would also be making decisions which would have a far-reaching impact both on the use of classification in general as a tool in online subject access, and on the importance of the DDC in particular as the classification system of choice in this process. The original project became known, both at Forest Press and at INFORONICS, by the name of "Editorial Support System" or ESS.

There are two conceptually distinct but very much interrelated facets of ESS: the design of the database records and the mechanics of the online tools which support their creation. The design problem was how to maintain the logical premises on which the DDC has always been based while using the potential of an online system to fully exploit the hierarchical structure of Dewey.

The starting point was the printed text of the Dewey 19th Edition, embellished by the first publised edition of the *Manual*. As most librarians (even the ones who do not use the DDC as their classification scheme) know, the traditional DDC consists of three sections: the Schedules, the Tables, and the Relative Index. The Schedules contain numbers representing the classification of all knowledge into ten main categories and thousands of subdivisions of these basic categories. The Tables list various extensions which can be added to Schedule numbers to provide a more precise definition of the scope of the classified work. There are seven categories of these extensions, and countless subdivisions at various levels of specificity. All numbers in the Schedules and Tables are hierarchically related to all other numbers which share a common decimal base. The Schedules and Tables are crisscrossed by a network of support elements such as centered headings, summaries, precedence tables, and (above all) notes of various sorts. Each of these serves a specific function in revealing to classifiers the internal logic of the DDC.

The Relative Index is an interesting structure. On the surface, it is a set of individually determined permutations of Scedule and Table concepts, accompanied by a set of cross-references which link the user either to the assigned number or to the correct indexing concept. There are also, however, references to "built numbers", or numbers which are created by adding to a Schedule number one or more extensions from elsewhere in the Dewey corpus. For example, there is an Index reference for SIDS (Sudden Infant Death Syndrome) to Dewey number 618.920078, even though this number is not mentioned in the Schedules. It is rather created by adding a specific extension from elsewhere in Schedules 600 to the base number for Pediatrics (618.92).

In 1975, Forest Press published for the first time a *Manual* for classifiers. This publication is divided into sections which are headed by selected Schedule and Table numbers, some built numbers from the Relative Index, a few new built numbers found only in the *Manual*, and a bevy of numeric sets (e.g., "385-388 vs. 629.046") which juxtapose two or more numbers for comparison purposes. The core of the *Manual* is a set of discursive instructions which provide detailed rules for assigning DDC numbers where the shorter Schedule and Tables notes do not suffice.

This was the data available to us as we pondered what the nature of the database record should be. Specifically, we debated whether the Schedule/Table, Relative Index, and *Manual* data which referenced the same Dewey number should be in one database record or in separate database records. After consultation with the editors at the DDC office of the Library of Congress, the decision was made to have a union record which describes all of the main elements which relate to a single number, including Index entries.

This decision was, in effect, the key one in the history of ESS development. It makes possible the editorial maintenance of the databases a set of unit records. More importantly, it significantly enhances the use of the database as an online subject access tool. Whether a searcher chooses a term which appears in a Schedule or Table heading, in a descriptive note, or as a concept in the Relative Index or *Manual*, (s)he will be led to the database record which generated the reference. The database design assumes that this potential use of the information will be available both to ESS users and to any other database vendors who choose to license the records from Forest Press for projects as not yet fully defined.

When we contemplated a system which would support the editorial work in the Library of Congress, we quickly recognized the need for an online system which combined full screen editing capabilities with extensive validation and a cursor positioning scheme which would provide quick access to most frequently edited portions of the Dewey notes. These features,as well as a sophisticated but unobtrusive prompting system, are the backbones of the system in its use as an editorial support tool.

It is, however, the search system which is the more interesting feature for anyone contemplating uses of the database for tasks other than the preparation of the printed volumes of the DDC. While we realized that the recall (the number of items retrieved) from the union database records would be great, we feared that precision (the relevance of the items retrieved) was likely to suffer because of it. We thus devised a scheme of contextual searching which allowed a user to specify, to several levels. where in the Dewey corpus the search term must be found before a match is reported. Thus, a search for the word "dogs" might be conducted via an unrestricted "find 'dogs' command, or by a more precise command such as "find 'dogs' in the Schedules", "find 'dogs' in an add note in the Tables", or "find 'dogs' in a cross reference in the Index". By this scheme, we succeeded in providing specific search strategies leading to the level of recall and/or precision which the individual searcher desires.

We also recognized the advantages of exploiting the hierarchical nature of Dewey numbers. As a result, we built in a truncation capability which gives the user the ability to isolate significant numeric segments no matter where they occur. For example, the segment

"0942256" is a generic geographic reference to Brighton, England, which can occur either at the end of a number, or nestled within a number. By the use of ESS's truncation capabilities, it is possible to isolate its presence in any DDC numeric context, or to limit the context explicitly. The search "find *0942256*" will find the segment either at the end of, or in the middle of, or at the beginning of any Dewey number, while the search "find *0942256" will limit the search to records in which the segment comprises the end of Dewey numbers only. A search for this string at the begining of Dewey numbers is also possible, via a "find 0942256*" command, but it is meaningless in this context since this string could never occur at the beginning of a DDC number.

While our search system, our editing system, and other aspects of ESS too numerous to mention here were solutions to the problems associated with one use of the DDC Database(TM), many other approaches are possible. It is the structure of the database and the nature of the Dewey numbers themselves which are of paramount importance in determining the potential for the transformation of DDC data from the confines of editorial support *per se* to other uses. This potential for other applications will form the substance of the last section of this paper.

Four major applications come immediately to mind, although others may be identified in the future. The DDC Database can, of course, be used to support the continuing development and publication of the Classification. It can be used as a classifiers' tool, part of an array of resources available online from a remote source or locally through CD ROM. The DDC Database can provide structure and vocabulary enhancement for subject searching in information retrieval systems, such as online public access catalogs, and some research has already been done in this area. In addition, it may also have value in higher level computer systems, such as knowledge-based and Artificial Intelligence systems. Each of these uses will be described more fully in the paragraphs which follow.

The DDC Database is already being used in the Editorial Support System to prepare Edition 20. The ability to contruct, edit, modify, and develop classification systems through interaction with a computer database has many advantages. Besides the efficiency obtained through interactive editing, major advantages are the capability to search for terms and numbers in the database, to see index terms both in relation to classification entries and in alphabetical order, and to print draft schedules coded or in publication format for review by editorial staff and advisory committees.

Such a database also has significant potential implications for cost, format, and frequency of publication. From the publisher's point of view, the classification is now in "type standing", up-to-date and virtually ready to be published at any time. This characteristic offers greater flexibility in determining the intervals between editions, and makes it economically feasible to consider new formats for updating. At present, users of the Dewey Decimal Classification receive updates and changes through the annual publication *DC&*, and through separately published replacement Schedules. Availability of the DDC Database online, shorter intervals between editions, and new formats for Schedule updates can relieve classifiers from having to deal with a multiplicity of printed sources or handwritten interlineations between editions.

The idea of a Catalogers Work Station (CWS) has been under discussion for some time. While online access to bibliographic and authority information is already available in some countries through online or microcomputer systems, many of the tools catalogers need are still used in traditional formats. Such tools include subject authority files, specialized thesauri, and classification schedules. The availability of the DDC Database makes it possible to consider including classification schedules and indexes as part of an integrated CWS. Proper design of such a system will require analysis of the ways catalogers and classifiers use these tools. Such research is already being undertaken by some suppliers of library computer services in the United States, and a prototype CWS will certainly be available there in the near future.

A landmark study on the use of classification systems to enhance subject searching in an online catalog was described by Dr. Karen Markey in a paper given at the 1985 meeting of this group in Chicago. The results of this study have now been published (1). The study compared an online catalog which had traditional subject-heading, title, and keyword search capabilities with a catalog enhanced by browsing displays and subject keywords from the Dewey Decimal Classification. The study was based on patron and staff searches at four library test sites: the Library of Congress, the New York State Library, the Public Library of Columbus and Franklin County, and the Mathematics Library of the University of Illinois at Urbana-Champaign. A key conclusion of the study: While the two methods of searching were relatively equal in precision, recall, and search time, each method retrieved different relavant bibliographic items from the same database. Recent papers by Mandel (2), Molholt (3), and Bates (4) have proposed radical new approaches to user access in online public catalogs, and Mandel and Bates have shown how some of these could involve classification.

The potential use of classification systems to structure and organize knowledge in Artificial Intelligence, knowledge-based and other advanced information systems is mainly a matter of speculation at present. One of the key problems of the established general classification systems, as they attempt to meet the needs of advanced information systems, is the requirement that they continue to serve the needs of their present customers. The availability of classification systems in database format opens the opportunity to enhance classification systems with features that will be present in the database version only. Potentially then, a classification system may accommodate some of the requirement of advanced information systems without affecting the services and products provided to present customers.

In a perceptive paper presented at the 1984 IFLA conference in Nairobi(5), Robert Holley raised the problem of the consequences for Third World countries of new technologies in classification, describing an emerging technological gap. Even in the developed countries, in the short term at least, many libraries will not be using computer services. For these reasons the publisher and editors of the Dewey Decimal Classification plan to continue to develop and support the print editions of the Classification. The DDC Database makes it possible to do this on a cost-effective basis.

We live today in a period of rapidly changing technology, accelerating growth in the quantities of information available, and continuing change on oour understanding of the world and universe around us. In the next decade alone, computers and communications technology will alter the ways in which libraries and information centers operate, the services they offer, and expectations of their users. The availability of both the DDC Database and the Editorial Support System put the Dewey Decimal Classification in a strong position to continue to meet the needs of its users throughout the world.

**Notes**


(1) Karen Markey and Anh Demeyer, *Dewey Decimal Classification Online Project: Evaluation of a Library Schedule and Index Integrated into the Subject Searching Capabilities of an Online Catalog*, Final Report (Dublin, Ohio: OCLC 1986), 382 p. + appendices. (Report Number: OCLC OPR/RR -86/1, 1986 February 28).

(2) Carol Mandel, *Classifcation Schedules as Subject Enhancement in Online Catalogs: A Review of a Conference Sponsored by Forest Press, the OCLC Online Computer Library Center, and the Council on Library Resources* (Washington, DC: Council on Library Resources, October 1986), 24p.

(3) Pat Molholt, "The Information Machine: A New Challenge for Librarians," *Library Journal* III, no. 16 (1986), pp. 47-52.

(4) Marcia Bates, "Subject Access in Online Catalogs: A design Model.," *Journal of the American Society for Information Science* 37, no. 6 (1986), pp. 357/376.

(5) Robert Holley, "The Consequences of New Technologies in Classification and Subject Cataloguing in Third World Countries: The Technological Gap," International Cataloging 14, no. 2 (1985), pp. 19-21.

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# The Usage of Classification Systems in National Bibliographies

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# The Usage of Classification Systems in National Bibliographies

**Abstract**

The following is a synopsis of the development of the utilization of international classification systems in national bibliographies during the past 10 years. Circa 40% of the classifications follow or are oriented towards the Universal Decimal Classification. From the analysis of the present situation--which even in any given classification system already shows a great range of variation--follow suggestions for further minimal standardization.

## The Usage of Classification Systems in National Bibliographies

### 1. Introductory remarks

The subject of this review is classification as the basis of the arrangement of the national bibliography (NB) from the 1977 Paris Conference on. Besides the printed catalogs, the national bibliographies in electronic form, i.e., the magnetic tapes of the national bibliographic agencies, are to be included, especially since their importance for the international exchange of national bibliographic data is increasing from year to year.

The fundamental objective of a national bibliography is to inform all interested parties about new publications, new editions, and reprints of the national book trade as soon and as completely as possible. This can be accomplished satisfactorily only by a systematically arranged presentation. The individual seeker of information is usually interested only in the output in a particular--but never all--fields. Moreover, the wording of a title itself does not always give a clue as to the contents of a publication or subject field to which it belongs.

### 2. Recommendation of the Paris Conference in Regard to Classification

The recommendation, made 10 years ago, concerning classed presentation of the national bibliographies stated in general terms in a single sentence: "The current issues of the printed national bibliography should be arranged in a classified order in accordance with a stated, internationally used classification scheme, and the arrangement of cumulations should be decided at the discretion of the national bibliographic agency."[1]

More precise information is available from the Unesco Guidelines for the National Bibliographic Agency and the National Bibliography[2], published

two years later, including among other information, the specification of what is meant by internationally used classification. Taking into consideration the great differences in cultural and linguistic traditions of the individual countries or regions, no definite classification scheme was recommended for general uniform application--unlike for the formal bibliographic standards. The difficulties in finding an acceptable international approach to setting down the content of a document are recognized. Indexing of the particular document is seen as that element of the bibliographic entry which requires the greatest intellectual effort and receives the most uneven treatment. Analysis of the content of a document, unlike the formal bibliographic description, is a very subjective activity allowing for greater discretion. In addition, the subject analysis is dependent not only on the cultural milieu of a country but also on the demands of the user on the NB.

2.1 Dewey Decimal Classification (DDC), Universal Decimal Classification (UDC), Library of Congress Classification (LCC), and Unesco Classification[3] are cited as examples of an internationally used classification.

2.2 It is recommended that an outline of the classified arrangement be included in an introduction to the bibliography.

2.3 Expansions at the national level of an internationally used classification scheme are provided for. This task should be undertaken in cooperation with the editors/compilers or publishers of the classification. The geography or history of the country, its languages, literature, and possibly its religion are affected by them. Examples of expansions of the DDC are Malaysia and Singapore, which, in consultation with the Forest Press, the publisher of the DDC, have worked out expansions for the language and literature, geography and history of

Malaysia and the Malay Archipelago, and of Oceania.

2.4 Whether a general outline by subject groups and/or by disciplinary fields of study, or a detailed classification in hierarchical systematic arrangement would be applied, should be the responsibility of the national bibliographic agency. The weekly list of the British National Bibliography serves as an example of a hierarchical, systematic principle. It is also an example of the high standards of objective presentation and at the same time, an example of scientific requirements to which an NB can conform, especially when another catalog that serves the interests of booksellers exists.[4] The same applies to the NBs of Australia and Canada.

In deciding for either more subjects and subject subdivisions, or for a specific hierarchical-systematic classification, one has to consider the bibliographic traditions as well as the needs of the user, and the staff resources of an agency. It is also dependent on the amount of the reportable book production and on the frequency of periodic issuance of the bibliography.

2.5 Notwithstanding the broad range of variations in the different applications of a single internationally used classification system, -- the Guidelines[5] identifies the DDC as an example, the same applies to the UDC -- one nevertheless sees the advantages of classification. The drawbacks of using subject headings are comparatively much greater, not only because of language barriers, but also because of different meanings of terminology based on different cultures. It should be investigated whether a yet greater standardization is possible and should be attempted for the application and presentation of the above-

mentioned classification systems, in order to warrant a better, world-wide exchange of information.

### 3. Review of the classification systems used by national bibliographies in electronic form

It is now possible to have a complete picture of classifications offered on magnetic tapes and for online-services nationally, thanks to the recently published International Guide to MARC Databases and Services.[6] There is no single electronic service which does not include notations of at least one classification system. The DDC (in 11 of the 19 countries) is the most frequently used classification. The UDC and the LCC each accounts respectively for about one third of the countries; with the exception of the Library of Congress, the LCC is never supplied alone but always in addition to the DDC or the UDC. Even when the individual countries use a continuous numerical sequence instead of the DDC or the UDC notations, such sequences are nevertheless based on the order and contents of the groupings of one of the international classifications.

According to the first edition of the International Guide published in 1983, the second largest group was still the one using its own respective subject categories.[7] According to the present edition, based on the data of 1984/1985, there is only one country which still does not systematize its national bibliographic literature according to any of the internationally used classifications.[8] This decrease of national classification in favor of an international system seems to reflect the trend of the standardization of the international data exchange as a fact. Furthermore, the efficiency of an exchange of information is increased when nearly one third of the countries that have a magnetic tape services[9] will add to their own DDC or UDC (as used

in their NBs) also the corresponding other classification and also will add LCC or, as does Malaysia, even add the National Library of Medicine. The electronic presentation seems to favor the combined use of a national and international classification or even several international classifications and thereby increases their application and use.

**4. Review of the classification systems used by national bibliographies in printed form**

It is very rewarding to look at the printed editions of those regions which are, in contrast to the large and important cultural and linguistic regions of the world, traditionally neglected by the NBs in electronic form. A rather uniform picture is offered by the countries of Latin America and the Caribbean as well as the English speaking countries of Africa--the clear majority of their NBs uses the DDC.[10] This is also largely true for countries in South Asia, Southeast Asia, and Oceania. The French speaking countries of Africa, on the other hand, prefer the UDC. Among the East and Southeast European countries in the mid-1980s, a slight majority were also users of the UDC.

In this respect the German speaking countries (the Federal Republic of Germany, the Democratic Republic of Germany, and Austria, and Switzerland) are also worth mentioning. Common to these was a decades-long uniformity of subject arrangement in their basic bibliographies. Considering the amount of literature made available, one could also speak here of an international classification. The Federal Republic of Germany stands, after the Soviet Union and the USA, at the head of international book production. The titles of the German speaking countries added together account for the second position in the world's book production.[11] Their breakdown into only 24

subject groups has been considered unsatisfactory for some time now because of the steadily growing number of reportable book titles. The Deutsche Bibliothek Frankfurt has opted for the UDC for the sequence and content of its new subject categories; since 1974 the Deutsche Bücherei Leipzig has followed the Library-Bibliographical Classification of the All Union Book Chamber in Moscow.

The geographical distribution of the classification systems interestingly reflects to a large extent cultural relations and links, for instance, the cultural heritage from the colonial past in the case of Africa.

Almost all NBs with some measure of current coverage refer in their respective prefaces to their having taken into consideration the Paris recommendation also in the application of a classification scheme. Newly produced or newly planned NBs are no longer developing classification systems of their own.

Upon still closer examination, no significant improvements are discernible. Thus the application of the DDC or the UDC, especially in countries developing librarywise, is frequently confined to within 10 main classes, without further subdivisions of such important disciplines as education, medicine, or agriculture.

The number of DDC-users in Africa and Latin America still basing their classification on the 18th rather than the 19th edition as recommended in the Guidelines, is not small. Besides that, there are still NBs, Europe included, which force their users to speculate on which of the internationally used classification systems they follow, or whether they use a classification system of their own. There has been no marked decrease of the group of NBs that have kept their old form of presentation since Pomassl's[12] evaluation;

according to an analysis in the Lenin Library[13] of the 221 editions of NBs in its collections as many as 25 per cent still have no subject approach. An offer to include here a tabular synopsis comparing the present situation with Pomassl's evaluation is being intentionally waived, for even an appendix for reference would be beyond the allotted scope of this presentation.

## 5. Consideration for further standardization by the utilization of classification systems

Despite the satisfactory adaptation to the recommendations, even among the block of DDC-users (ca. 40 per cent of the classifications) and of UDC-users (ca. 35 per cent of the classifications) the picture is so uneven that precise statements towards further standardization prove to be necessary. The IFLA Section for Classification and Indexing has already taken up the issue of improving the value of the information provided about classifications used in the NBs in two contributions by its Standing Committee member Sukiasian,[13] published three, and four years ago respectively. The following proposals for further improving the value of the information provided about the characteristics of NBs result from those discussions and our own analysis of the present situation.

5.1 A preface in the bibliography--something that indeed is not yet present in every NB--should make a statement about the classification system used. It should be noted which edition of the DDC or the UDC is being applied.

5.2 There should be, analogous to the Paris recommendations, an outline of the arrangement of the classification; in addition to the main classes the listing should include subdivisions used, obviously together with the necessary individual amplifications and changes. This makes it

easier to use the NB and allows the whole of the national book production to be comprehended at a glance.

5.3 A list of the DDC and UDC notations is an additional help for the informed user. If these are arranged in a sequential numerical or alphabetical order, there should be an additional concordance to the DDC or the UDC counterpart as a further aid in the clarification and/or an easy comprehension of the national bibliographic product.

5.4 A statement about the function of the classification and its notation would also be user friendly. Does the notation serve simply as a general description of the subject fields and thereby only as a subject orientation? Or are precise statements made beyond that about the document's content through additionally included notations related to the title, either at the beginning or at the end of the bibliographic entry? Or is everything possible being stated about the content of a document which a subject classification permits? A wide range of approaches is being practiced in the various NBs.

5.5 A bi- or multilingual approach to the preface and the outline of the classification schemes is offered in many NBs in lesser-known languages. This should become a regular practice, e.g., in addition to a preface and table of contents in Arabic, there should also be one in English.

5.6 A subject index as a supplement to the classified main section should essentially always be an obvious component of the NB. Even if the subject index itself is limited only to the textual expl ıtions of the DDC and the UDC-notations, it nevertheless serves at least as an alphabetical guide to the classification.

A subject index is an obvious component of the NB in connection with a detailed hierarchical presentation of the material. It not only guides less familiar users regarding the structure of the classification, but a specialized subject index also makes possible a focused information search. It is more helpful than a special notation with position tied only to the title. But of course such a service to the information seeker is possible only with the appropriate equipment and qualified support staff.

5.7 It is important to retain for the sake of international information exchange the identity of the classification system used and its national application, as well as the necessary national expansion of the system, e.g., for linguistics, literature, and the history of a country. The national variations should be demonstrated in a simple example of the children's and juvenile books in the UDC:

- a special classification is possible (087.5)
- it is shown within the individual classes,
  but in a separate alphabetical order
- no special display at all.

The changes made, for example, by the Bibliographie de la France in September 1986 are a good example of a feasible further adaptation to the UDC. A comparison of the sequence of its subject groups in the Bibliographie de la France with those, for example, of the Deutsche Bibliographie, shows also what possibilities of interpretations, and thereby variations, the UDC leaves up to a user.

## 6. Closing remarks

In order to achieve comparability between national bibliographies in the results of indexing, their differences in construction must be halted, an urgent but expensive task. A prerequisite for it would be a comparative investigation and synoptic presentation of the structure of the national differences. In connection with that would be an effort--in collaboration with the publishers of the internationally used classification systems--to lay down firmly internationally acceptable guidelines with respect to

- the order of subject groups
- the scope/range of contents within each subject group
- the comparability of the hierarchical orders.

Only the application of reasonably uniform or comparable characteristics in designating content for the object of a bibliographic entry can guarantee an effective world-wide exchange of information.

**Footnotes**:

[1]Recommendation 11 in: International Congress on National Bibliographies, Paris, 10-15 September 1977, Final Report (PGI-77 / Conf. 401 / Col. 11) - Paris : Unesco, 1978, p. 12.

[2]IFLA International Office for UBC: Guidelines for the National Bibliographic Agency and the National Bibliography (PGI-79 / WS / 18) - Paris : Unesco, 1979, p. 21, 35-36, 39-41. (Cited as: Guidelines)

[3]Unesco: Recommendation concerning the international standardization of statistics relating to book production and periodicals, adopted by the General Conference at its 13th session, Paris, 19 November 1964. This classification is based on the UDC; it comprises 23 subject groups and is used in the Belgian NB.

[4]Whitaker.

[5]Cf. Guidelines, footnote 2, p. 3.

[6]International Guide to MARC Database and Service : National Magnet. Tape and Online Services. Ed. by Dieter Wolf and Francine Conrad. - 2., rev. and enl. ed. - Frankfurt am Main : Deutsche Bibliothek, 1986.

[7]Conrad, Francine. National Magnetic Tape Services : Current Status and Outlook. Paper delivered at the IFLA General Conference Nairobi, 1984.

[8]Japan.

[9]Countries having national bibliographic magnetic tape services are in South-east Asia Malaysia and the Philippines, in Latin America Venezuela, in

Eastern, respectively South eastern part of Europe, Yugoslavia.

[10]Boy, Joachim. Nationalbibliographien Schwarzafrikas : Entwicklungen und heutiger Stand. - Köln : Greven, 1981.

Gorman, Gary E. and M. M. Mahoney : Guide to Current National Bibliographies in the Third World. - Oxford; Zell; München; New York; London; Paris : Saur, 1983.

Nilges, Annemarie. Nationalbibliographien Lateinamerikas. - Köln : Greven, 1983.

Solape Bankole, Beatrice. Current National Bibliographies of the English Speaking Countries of Africa. In: Internat. Cataloguing, 1980, Jan./March, p. 5-9.

[11]Buch und Buchhandel in Zahlen. - Frankfurt am Main : Buchhändler-Vereinigung. 1982 edition, p. 48. 1986 edition, p. 56-57.

[12]Synoptic Tables Concerning the Current National Bibliographies. Comp. by Gerhard Pomassl and a working group of the Deutsche Bücherei. - Berlin : Bibliotheksverb. d. DDR; Leipzig : Deutsche Bücherei, 1975. (Cited as: Pomassl). An up-to-date new edition was proposed in 1986 by the IFLA Section on Bibliography.

[13]Sukiasian, E. R. Survey of Classification Schemes Used in National Bibliographies. IFLA General Conference München 1983.

Sukiasian, E. R. Classification Systems in National Bibliography : Survey and Recommendations. - IFLA General Conference Nairobi 1984.

IFLA General Conference, Brighton
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Section: Classification and Subject Indexing

203-CLAS-3-E

# CLASSIFICATION NUMBERS IN SOVIET PUBLICATIONS: REVIEW OF CLASSIFICATION SYSTEMS AND REGULATIONS OF CLASS NUMBERS PUBLICATION IN SOVIET BOOKS AND PERIODICALS

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150

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Classification numbers in Soviet publications: Review of classification systems and regulations of class numbers publication in Soviet books and periodicals

Abstract

Centralized systematization in the Soviet Union covers all state publishing houses and rests on the requirements of State standards. Classification numbers of the Bibliothecal-Bibliographical Classification and numbers of the Uniform System of Classification of Literature for Book Publishing in the USSR are stated in all publications. Along with these numbers, books and periodicals in the fields of science and technology, medicine and agriculture are furnished with UDC numbers. The effectiveness of their usage in many things depends on the knowledge of classification rules and the availability of classification tables in libraries.

In the present report we continue tp introduce our foreign colleagues to the classification practices accepted in the Soviet Union. In our paper(1) submitted to the IFLA Section on Classification and Subject Indexation at the Tokyo Session (1986) we spoke in details about the contents of the State Standard of the USSR "Classifying of Documents. General Requirements"; where, in particular, for the first time in our country and at the level of State Standardization the use and application of several classification systems are regulated. Acceptance of the "Standard gave a new stimulus for developing centralized systematization (in the past the term" centralyzed classification was used in our country). Classification numbers now appear directly in publications and this fact became wide-spread and an effective way of improving the library working methods.

As it is known the idea of publishing classification numbers (initially on printed catalogue cards) belonged to the author of "Decimal Classification" Melwil Dewey (1851-1931). It was proposed 110 years ago but put into practice only three decades later when first printed cards were issued by the USA Library of Congress. Yet still earlier classification numbers apleared aight on the title pages and book covers. The earliest edition that we managed to find at the V.I.Lenin State Library of the USSR is the manual on the financial right by professor S.I.Ilovayskiy - it was published in Russia (in Odessa) in 1896 with Classification Number 336 (02).

The centralyzed systematization has gone a considerable historical way. Classification numbers first appeared on printed cards, then - in periodical publications besides the articles headings beginning from 1901 in Russia classification numbers were printed together with the articles headings even in the newspaper of a special branch character (the "Vrachebnaya Gazeta"). Beginning from 1905 classification numbers appeared in the Russian biliographic publications. Later this practice widely spread, and today we cannot imagine a solid bibliographic publication of current bibliography without classififcation numbers within each bibliographic record. They are compulsory in the National Bibliography (2).

The outstanding theoretican of classification, Henry Evelyn Bliss (1870-1955) in one of his articles in 1927 gave the theoretical basis of the purposes and tasks of the centralized systematization.(3) At the same time specialists of our country had been discussing the peculiarities of publishing numbers in the "Knizhnaya Letopis" - the organ of the National (State) Bibliography of the USSR.(4) In his article published in 1937, Wilhelm Sholten, the manager of the Netherlands Patent Bureau, managed to express in a condensed form the main requirements to the numbers appearing in publications.(5) During the next decade scores of articles and materials devoted to the theory and practice of centralized systematization were published in different countries of the world. The Soviet specialists studied both the home and foreign experience and they greatly contributed to studying the history, theory, and methodology of this field.

The most used sphere of distribution of the centralyzed

systematization happened to be the publications that include cataloguization information. The "Cataloging-in-Publication" (CIP) is distributed in many countries of the world; its development, experience, and problems were discussed at the International Conference in Ottawa in 1982[6]. In the USSR the requirements to CIP became regulated at the national level some 20 years ago. First, from April 1, 1967 they were incorporated into the text of the instruction that was compulsory for all publishers. In January, 1970 for the first time was introduced the State Standard of the USSR "Imprints in the Publishers Production" (GOST 7.4-69). There were some additions to this Standard in 1977 (GOST 7.4-77); and during the following years the Standard was completely reviewed and after approval it was named "Publications Imprints". GOST 7.4-86 will be introduced in the USSR from January, 1988.

It should be reminded that according to the Standard "Classifying of Documents. General Requirements" there are 6 classification systems all in all that are used in the USSR; and two of them are rather special and are intended for systematization of standards, and technical specifications, patents, and descriptions of inventions for the authors' certificates. The other four systems are universal in their contents and they are used not only in libraries but in the scientific-and-technological information agencies as well.

The Standard determines the place of the classification number publication of all four systems; the Standard also shows the cases when depending on the kind of publication, poligraphical or other special features, the reader's purpose, the subject of the publication - the classification numbers of one or another system are not published.

According to the strict rules the classification number may be placed in the publication separately or together with some elements of the imprints (most often - on the back of the title page or on the last page of the book's text).

The Universal Decimal Classififcation(UDC)

The UDC classification number is placed as a separate line in the upper left corner of the back of the title page in publications on natural and technical subjects. Such limitations are connected with the practices of the UDC employment accepted in the USSR; the UDC was introduced in the USSR in 1963 as an obligatory classification system for scientifical- and- technological libraries and for the science- and -technology information bodies - and only on natural and technical sciences.

The UDC number may be not present in miniature editions.

At present in our country we continue publication of the third Soviet edition of UDC (FID No 572), Tables of Classes 5 and 6 are already completely finished and published. Thus, there was created the basis for using in publications of the classification numbers of the most up-to-date variant. Corrections and extensions to the UDC are regularly published in the USSR. There is a collection of works "News in UDC", that publishes separate pages of the third Soviet edition with all corrections and extensions. These pages may be used for substitutions or extensions of the corresponding pages in the classifi cation tables.

In publications on natural and technical sciences on the back of the title page there must be placed a summary that starts with the bibliographical description. In these cases the UDC number is given as a separate line above the bibliographical des -

cription.

In the journals on natural and technical sciences the UDC number is published on the left above the title of the article as well as in the text of the summary or the separately published bibliographic record. Both books and journals have full numbers i.e. one or several classification numbers which in their totality completely discover the subject. An exception to this rule is publication of the number in the book location number at the upper left corner of the back of the title page. In these cases only one classification number is given here (if the full number has several classification numbers the location number incorporates only the first one). The location number also includes the author's sign as the first letter of the author's name or the book heading, and the figure that is determined by the special authors tables compiled similar to the widely used in many countries the "Cutter's Tables" or "Cutter Numbers".

The location number published in books has a recomendatory character. It might be specified, shortened, or detailed at libraries. In the USSR where the unified system of classification functions in the public libraries network - this practice is fully justifies itself.

Library-Bibliographical Classification (LBC)

The LBC classification number is the main element of the location number. The location number may be not given in publications on natural and technical sciences, booklets, pamphlets, calendars, books for children of under-school and the elementary-school age, miniature editions: mostly here we speak about such publications that are not arranged in the systematic order.

Each library puts the classification number in the location number of books on natural and technical sciences in correspondence with the employed classification tables - UDC or LBC.

The functions of CIP in the Soviet books is performed by the model-card the publication of which was started about 30 years ago. The model-card includes all main elements of the real catalogue card: the bibliographic record heading, the bibliographical description text, the annotation, the classification numbers, the author's sign. The model-card is given in all publications but very narrow special; the model-card is substituted with a summary in the books on natural and technical sciences. Thus, the model-card performs very important functions of the communicative character in the publication: it conveys bibliographical information about a book. The model-card serves a kind of the publication bibliographic passport, that identified the publication and determines the unique form of reflecting the publication in catalogues and bibliographical aids. The Soviet librarians who work with foreign publications understand the communicative functions of the model-card: in those countries that successfully carry out the CIP national programmes we meet the same cataloging information and use it in the literature processing.

The annotated model-card provides an annotation that in a few sentences understandable to any reader gives the content, purpose, and intention of the book. The LBC classification numbers are published with the proceding abbreviation "LBC" (whereas the UDC numbers are published with the corresponding "UDC"). There are two variants of the LBC tables: for public libraries (in most cases) and for children and school libraries (in those

cases when the content and the reader's purpose of the book leave no doubt about the choice of this variant of the tables). The variants of the LBC tables are coordinated to one another. The conditions of the multinational Soviet State provide for the unification of the classification tables and their numbers - they are translated in numerous national languages of the peoples of the USSR.

Corrections and extensions are systematically published to the LBC tables for the research libraries. There are no principle difficulties for publication of such materials, - taking into consideration the volume and peculiarities of the tables, - both for the public, and the children and school libraries. Yet, here we are facing some contradictions that are not easy to overcome. Each specialist dealing with the centralized systematization knows that when using any classification system collectively the first place is ocuupied by such feature as the stability of the classification tables. It is not so difficult to introduce any corrections and extensions; it is much more difficult to decipher the classification number, to understand its content - as the number itself does not say when and what tables were used; what kind of corrections and extensions were considered if any. The "value" of any correction made in the tables is very high in those cases when not scores or hundreds but thousands libraries are concerned. Because all corrections are made in catalogues decentralized.

Realization of this problem led in our country to a very rigid selection of only those corrections and extensions that are really necessary for maintaining the classification tables quality in the period between their regular editions. The cases when the states in the world are renamed are not so often. And this is just an example of an emergency operative change. For the libra-

ries of the country we can use publications in the "Bibliotekar" journal. In all other cases the materials are accumulated and reflected in the regular edition of the tables. All variants of the LBC tables are compiled at the V.I.Lenin State Library of the USSR, which allows to reflect the corrections and extensions that are unique in contents and in methodological solutions.

Rubricator of the State Automated System of Scientific- and-Technical Information (Rubricator JASNTI)

The classification numbers of the Rubricator GASNTI are given only in the information publications- and in the upper left corner of the first cover or the title page with the preceding abbreviation "RGASNTI".

Unified Classification System of Literature for the Book Publishing in the USSR (ESKL)

The classification abbreviation ESKL enters the complex book-trading number-code that is published in books in the lower part of the back of the title page or in an annotated model-card.

The complex book-trade number-code performs many various functions; and in the library practice it is used as usual in the process of the library collections acquisition. It consists of the publisher's symbol, its departmental submission, the book's ordinal number (at the publisher's - beginning this year), the number of the record at the thematical plan of the publisher, and other information. Most bookshops in the USSR arrange books on the shelves according to the ESKL numbers. The national bibliographic indexes of our country (the "Knizhnaya Letopis", the "Letopis Zhurnalnykh statey, etc...) arrange the bibliographic records also according to ESKL.

We have successively analysed the classification system used in the USSR in centralyzed systematization; the rules of publication of their classification numbers in the Soviet publications. The practices of centralyzed systematization in our country are continuosly improving; the State Standards requirements were revised and specified many times during last twenty years. This is why we believe that the USSR experience in this field may be of interest and use for our foreign colleagues.

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